

CLEAN COPY

1. (Twice Amended) A pelletized dense additive for lost circulation, seepage control, fluid loss and control of lubricity, viscosity and rheology in drilling operations, the additive comprising:

a plurality of untreated, comminuted particles formed of base material defining a ground raw base material, the ground raw base material being compressed and shaped to define a pellet body having a density substantially greater than the plurality of untreated comminuted particles of base material, the pellet body being operable to disperse within a drilling fluid directly upon introduction to the drilling fluid, the pellet when dispersed in the drilling fluid is operable to inhibit lost circulation, seepage and fluid loss of the drilling fluid.

2. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material is selected from the group consisting of lignites, leonardites, lignin-based powders, bitumens, lignosulfonates, asphalts, clays, polyacrylate homopolymers and copolymers, cellulosic polymers, xanthan gums, metal silicates, starches, guar gum, cellulosic fibers, fatty acids, amphoterics, carboxymethyl cellulose, welan gum, hydrocarbon resins, barite, hematite, hydroxyethylcellulose, chlorides, bromides, polyphosphates, zinc, gilsonite, graphite, coke and mixtures thereof.

3. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compounds selected from the group consisting of calcium carbonate, mica, diatomaceous earth, Fuller's earth and other silicates, activated charcoal, bauxite, alumina gel, graphite, gilsonite and mixtures thereof.

4. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compound selected from the group consisting of lignites containing calcium hydroxide, leonardite, leonardite with potassium, leonardite with gyp, organophilic leonardite, lignin-based powders, bitumens and mixtures thereof.

5. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compounds selected from the group consisting of lignosulfonates, lignosulfonates with chrome, lignosulfonates with calcium, lignosulfonates with iron,

lignosulfonates with tin, lignosulfonates with zinc lignosulfonates with heavy metals and mixtures thereof.

6. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compounds selected from the group consisting of asphalt, sodium sulfonate asphalt, potassium sulfonate asphalt and mixtures thereof.

7. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compounds selected from the group consisting of clays, organophilic clays, attapulgite clays, montmorillonite clays, kaolinite clays, calcined clays and mixtures thereof.

8. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compounds selected from the group consisting of polyacrylate powders, polyacrylamide homopolymers, polyacrylamide copolymers, polyanionic cellulose, cellulosic polymers and mixtures thereof.

9. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material further includes compounds selected from the group consisting of xanthan gums, metal silicates, vegetable starches, fatty acids, cellulose compounds, barium sulfate, hematite, hydroxyethylcellulose, sodium chlorides, calcium chloride, potassium chloride, bromides, polyphosphate, sodium, calcium, zinc, gilsonite, graphite, petroleum coke, calcine coke, Rockwool insulation and mixtures thereof.

10. (Twice Amended) The pelletized dense additive of claims 1 further comprising a binding agent selected from the group consisting of clays, guar gum, lignosulfonate, wood sugar, starch and mixtures thereof.

11. The pelletized dense additive of claim 1 wherein the base material is a mixture of two or more base materials wherein one of the base materials being an organic material.

12. (Twice Amended) The pelletized dense additive of claim 1 wherein the base material is selected from the group consisting of ground wood, pine bark, fruit pomace, vegetable pomace, yellow pine, pine bark, corn cobs, peanut hulls, pecan pits, almond shell, corn cob outers, bees wings, cotton burrs, kenaf, silage, oat hulls, rice hulls, seed shells, sunflower, flax, linseed, cocoa bean, feathers, peat moss, jute, flax, mohair, wool, sugar cane, bagasse, sawdust, bamboo, cork, popcorn, tapioca, grain sorghum and soluble gums.

13. The pelletized dense additive of claims 1 wherein the pellets have a diameter substantially in the range of 1/8 inch to 3/4 inch and a length substantially in the range of 1/8 inch to 2 inches.

14. The pelletized dense additive of claim 1 wherein the untreated, comminuted particles define an original particle size distribution and wherein the pellet body is further operable to revert to substantially the original particle size distribution of the plurality of untreated, comminuted particles so that when dispersed in the drilling fluid the dispersed pellet mixes with the drilling fluid.

15. A method of pelletizing a raw base material for use as a drilling fluid additive in subterranean drilling operations, the method comprising the steps of:

3
C grinding a raw base material to produce granules, the raw base material containing naturally occurring binding agents;

heating the granules to liquefy naturally occurring binding agents;

pressing the heated granules through apertures to form pellets that are of substantially greater density than the base material, the pellets operable to disperse within a drilling fluid directly upon contacting the drilling fluid.

16. The method of claim 15 wherein the base material comprises an organic material.

17. The method of claim 15 wherein the granules further comprise an original particle size distribution so that the pellets revert to substantially the original particle size distribution upon dispersion into the drilling fluid.